Calcinsosis cutis in the auricle: a case report

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ABSTRACT
Calcinsosis cutis is a rare condition defined as the pathological accumulation of amorphous insoluble calcium salts in cutaneous and subcutaneous tissue. There are four subtypes - dystrophic, idiopathic, metastatic, and iatrogenic calcification. The dystrophic form is the most common type of calcinsosis cutis, the major agent being trauma. Serum calcium and phosphorus values are within normal limits in these patients. The clinical manifestation generally involves small white papules, and subcutaneous nodules or plaques. The first choice in the treatment of calcinsosis cutis is surgery. Surgical procedures have been recommended as the first and most effective option in almost all cases in the literature. We report a case of a patient presenting with growing, painless swelling following trauma to the auricle of the ear identified as dystrophic calcinsosis cutis following surgical excision.

Keywords: Auricle, dystrophic, calcinsosis cutis

INTRODUCTION
Calcinsosis cutis was first described by Virchow in 1855. This rare entity is defined as the pathological accumulation of amorphous insoluble calcium salts in cutaneous and subcutaneous tissue with four subtypes - dystrophic, idiopathic, metastatic, and iatrogenic calcification (1,2). Foreign body giant cell reaction around an irregular calcium mass is seen at histological examination, this formation being located in subcutaneous fatty tissue (3). Clinical, it generally appears as small white papules, and subcutaneous nodules or plaques (4). There has been negligible research into the prevalence of the disease, particularly in children. Most data are obtained from case reports (5). We discuss the causes and treatment of dystrophic calcinsosis-related tissue damage with a rare case of calcinsosis cutis developing following auricular trauma in a pediatric patient.

CASE REPORT
An eight-year-old boy presented to our clinic with growing, painless swelling in the auricle of the right ear. The patient's history revealed trauma to the right auricle three years previously, and that the swelling had increase continually subsequently. Examination revealed two lesions, 1.5x1 cm and 1x1 cm in size, on the helix of the right auricle (Figure 1). The swellings were hard and painless at palpitation. No similar lesion was present in any other part of the body. General clinical examination was within normal limits. The patient's own and family histories were unremarkable. Complete blood count, urea, creatinine, serum calcium, phosphate, magnesium, and parathyroid hormone levels were within normal ranges. Excision under local anesthesia was planned on the basis of those findings. Histopathology results were reported as calcinsosis cutis. No recurrence was observed over one-year follow-up. Written informed consent was obtained from the patient.

DISCUSSION
Calcinsosis cutis, characterized abnormal accumulation of calcium salts in cutaneous and subcutaneous tissue, is classified as dystrophic, idiopathic, metastatic, or iatrogenic, depending on the pathophysiological mechanisms (6). The dystrophic form is the most common type of calcinsosis cutis, with trauma as the major agent. Serum calcium and phosphorus values are within normal ranges in patients in this group. However, local tissue abnormalities in collagen, elastin, and subcutaneous fatty tissue can accelerate calcinsosis (6). Dystrophic calcinsosis cutis may be associated with autoimmune connective tissue diseases such as juvenile dermatomyositis and genetic disorder such as Ehlers-Danlos syndrome and Werner syndrome (5).
Calcifications have also been reported in the thigh region in insulin-dependent diabetes patients and in the heel as a result of multiple heel punctures in infants (3). In the present case, dystrophic calcinosis cutis was diagnosed due to the post-traumatic occurrence of the lesions and normal calcium and phosphorus levels.

Metastatic type calcinosis cutis occurs in case of hypercalcemia and hyperphosphatemia associated with abnormal calcium or phosphate metabolism. It is most frequently seen together with chronic renal failure (7). The phosphate excretion mechanism and vitamin D3 synthesis are impaired in association with renal failure. Blood calcium levels decrease and phosphorus levels increase with impairment of calcium excretion through the intestines, and calcification occurs in healthy tissues (3,7). Additionally, metastatic calcinosis cutis can be observed in case of hypervitaminosis D, sarcoidosis, Albright's hereditary osteodystrophy, milk-alkali syndrome, and pseudohyperparathyroidism (5).

Iatrogenic type calcinosis cutis is generally observed in parenteral calcium treatment. Calcifications may occur in the skin as a result of extravasation during intravenous administration of calcium-containing fluids or after the use of calcium alginate-containing dressings (1).

Idiopathic type calcinosis cutis is the rarest form, the etiology of which is unclear. Clinical and laboratory findings are normal, with only calcium deposition being seen in subcutaneous tissues. Idiopathic calcinosis cutis is diagnosed in the absence of systemic and metabolic diseases and after the exclusion of other causes of tissue damage (8).

Surgical excision is the first choice in the treatment of calcinosis cutis. Surgical procedures have been recommended as the first and most effective option in almost all cases in the literature (8). CO2 laser ablation can be applied in case of small and widespread lesions (9). Probenecid, colchicine, warfarin, bisphosphonates, and diltiazem can be used in the treatment of dystrophic calcinosis cutis (10). These drugs are useful in preventing calcinosis formation, but are not effective in the treatment of existing calcified masses. Surgical treatment has been shown to be superior to medical treatment of calcified masses (7). Auricular lesions were also totally excised under local anesthesia in the present case, and no recurrence was observed over one-year follow-up.

**REFERENCES**